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ARTICLE I.—*Valedictory Address to the Graduates of Rush Medical College, Session of* 1855–6. By W. B. HERRICK, M.D., Professor of Physiology and Pathology. [Published by request of the Graduating Class.]

In compliance with the request of our President, and in behalf of my colleagues, I rise to perform a duty which we, as teachers, owe to ourselves, the public, and especially to you, gentlemen, who have this evening assumed the high responsibilities of a profession, the importance of which experienced practitioners and teachers alone can appreciate.

Believing that, in justice to ourselves and the noble science of our adoption, we should, on all proper occasions, advocate its claims, especially upon such as are, as its representatives, about to become responsible for the degree of honor and respect paid to it by others; I propose, for the purpose of showing, by this portion of its history, what are its claims to both public and private consideration, at this time to give to my hearers, and especially to those of the graduating class, a brief historical sketch of the origin of the science of medicine; for all must admit, that in proportion as any profession, art or science has

an influence upon the condition and progress of man, as indicated by past history, present considerations or future anticipations, it merits honor and respect.

The Temple of Medicine, viewed by the light of such historical facts as are now before us, seems to have been progressing towards completion during several distinct periods; separated by intervals during which the laborers, disheartened for want of the materials now abundantly supplied by the physical sciences, especially anatomy and chemistry, abandoned for a time the noble work, and suffered its unfinished and neglected walls to crumble and decay under the destroying influence of time and neglect.

The first of these—extending from as far back as tradition and history can carry us, to the dispersion of the Pythagorian society 500 years before Christ—is remarkable for being that in which all knowledge was communicated from the teacher shrouded in mystery, and received by the learner with blind credulity.

We learn from sacred history, that for a period immediately following the creation of man, and at intervals for a long time after, our Heavenly Father, as if mindful of the helpless condition of his children in their yet imperfect and infantile state, communicated to them, either directly or by inspiration, the knowledge requisite for the preservation of health and prevention of disease.

"The writings of Moses," says a distinguished medical historian, "constitute a precious monument of the history of medicine," for they embrace hygienic rules of the highest sagacity.

Moses, it would seem, communicated these hygienic laws to the priests, the Levites, and they to the people. This was the practice among the Jews till up to a period 300 years before Christ, when physicians, having a true and independent position as students of nature and cultivators of science, received from one of the inspired writers of the Bible itself the following high commendation:—

"Honor the physician, for he is indispensable, for the Most High has created him."

"For all medicine is a gift from God, and the physician shall receive homage from the king."

"The science of medicine shall elevate the physician to honor, and he shall be praised before the great."

"The Most High has created the medicines out of the earth; and he that is wise will not abhor them."

Ere long, however, man, preferring to be guided by his own wayward inclinations rather than to submit longer to the Divine laws, had wandered from that stream, the source of which was an ever-living inexhaustible fountain of knowledge and truth, at a time when the people of all nations, whether Jews or Pagans, were seeking to quench their natural thirst for knowledge from those impure fountains furnished by the priests; who, in Jewish synagogues and Pagan temples, assumed to be the only true physicians for both body and soul, and to possess all knowledge of the past, present, and future, as is abundantly shown by the historical and traditional accounts of ancient medicine, as it then existed throughout the world.

The antiquity of Egyptian Medicine is shown from the fact, that 1700 years before Christ, Egypt possessed men who practiced the art of medicine, for we read in the Bible, that when Jacob died, "Joseph commanded his servants, the physicians, to embalm him; and the physicians embalmed Israel, and forty days were fulfilled for him; for so are fulfilled the days of those that are embalmed."

Thus it is seen, that embalming was in the hands of Egyptian physicians, yet so averse were the people to anatomical investigations, that they stoned those whose business it was to make the opening through which the material was introduced, and thus compelled them to flee for safety.

"Thoth, whom the Greeks named Hermes, and the Latins Mercurius, passed among the Egyptians as the inventor of all science and art, and was said to be the author of thousands of volumes on various scientific subjects; of which those upon medicine helped constitute a volume called the *Sacred Book*, written in a language known to the priests alone, and containing rules, to deviate from which was death."

In India, the Brahmins were both priests and physicians.

They alone were permitted to know Sanscrit, the language of the learned, in which all medical books were written.

During their professional visits to patients, they examined the pulse, observed the countenance, looked at the stars, watched the flight of birds, &c., but never noted the symptoms. They were especially attentive to cleanliness and rules of hygiene; but assumed, with all the presumption of a Mormon prophet, that their knowledge was directly from the gods.

All that is known of the condition of medical science among the Greeks, previous to the Trojan war, is traditionary, and so blended with the mythology of that period that it is impossible to distinguish, through the shadowy veil which poetic and imaginative historians have drawn between the present and past, who of the numerous gods and deified men of that mystic age were the real fathers of Medicine.

According to their mythological traditions, *Melamphus* was the first Greek physician "who immortalized himself by extraordinary cures, and to whom, from gratitude, altars were erected." He lived in the time of Proteus, king of Argos, nearly 200 years before the Trojan war. He is said to have cured Iphiclus of a species of debility by giving rust of iron; and the daughters of Proteus of hysteria, with milk in which white hellebore had been infused. (Not bad practice that, for a physician who lived more than 3000 years ago.)

Chiron, another of the antique physicians, was less illustrious than his contemporaries as a practitioner; but more noted than any as a teacher. He held his school in a grotto in Thessaly, and, if the tradition be correct, we modern professors might well envy the high and honorable position of old Prof. Chiron, who could number among his pupils many of the heroes concerned in the capture of the Golden Fleece, and in the Trojan war—such as, the mighty Hercules, the subtle Ulysses, the fiery Diomedes, the prolix Nestor, the pious Æneas, and the invincible Achilles. But, of all his disciples, the most noted was Esculapius, whose devotion during his eventful life to the science of medicine, then in its infancy, caused him to be deified by the Greeks as the son of Apollo; believing, as they did at that period, that any new development in the arts and sciences

could have no other than a divine origin. Hence, Esculapius was regarded with nearly universal veneration. His worship, which passed from the Greeks to the Romans, extended into all countries penetrated by the arms of these two nations. Throughout the then civilized world numerous temples were erected to his honor, in which medical teachers, as priests, were constantly employed in perpetuating his doctrines and cherishing the yet young and undeveloped son, committed to their care by the Father of Medicine.

In regard to the treatment of diseases by this ancient physician, we possess no information entitled to much credit. The poet Pinder, who lived 7 or 800 years after, says of Esculapius: "He cured the ulcers, wounds, and fevers of all who applied to him, by enchantment, calming potions, incisions, and by external applications." It is said, he brought to life, Hippolytus, son of Theseus; a Capaneous, a Lycurgus, an Eryphile, and many others.

Pluto, god of the infernal regions, alarmed to see the number of new arrivals in his gloomy kingdom diminishing day by day, complained to Jupiter, who destroyed the audacious healer. On this account, says a wit, modern sons of Esculapius abstain from performing prodigies.

Other nations, both of the old and new world, have traditions showing that the practice of medicine began with the formation of society, and that it has, everywhere and in all time, been held in high veneration.

"In Gaul, and in the Brittanic Isles, the Druids were at the same time priests, legislators, and physicians."

Montezuma, emperor of Mexico, possessed gardens where great numbers of plants were cultivated, the properties of which were well known to the physicians of the country.

Thus we have seen that the first notions of medicine go back to the earliest infancy of society in all the countries of the world, and if there exists any nation which, at any epoch in its history, was without physicians, there is not one in which we do not find some vestige of medicine.

The following remarks of the wise Socrates, upon the diseases consequent upon a change from the simple and primitive habits

of the people of the age of Hippocrates, to those of refinement and luxury, such as were indulged in many years after by the people of an *ancient republic*, merit from us, members of this great confederacy, equal consideration: "Is it not a shameful thing," says he, "to be compelled to call upon a physician, not for the cure of wounds or diseases of the seasons, but for such as are produced by indulgent life, which fills us with humors and unhealthy vapors like swamps, thus obliging the worthy sons of Esculapius to invent such new names as catarrhs, fluxions, etc.?"

A certain portion of this period of the foundation of medicine, extending from the time of the Trojan war to that of Pythagoras, was characterized as that during which the worship of Esculapius, as the god of medicine, was spread throughout Greece, Asia, Africa, and Italy.

Among the temples which were consecrated to him, those of Epidaurus, Cos, and Cyrene are particularly remarkable.

The priests attached to his worship were named Esculapiadæ, a word which signifies descendants of Esculapius.

They formed a particular cast, governed by sacred laws, like the priests of Egypt, one of which is as follows:—

"It is not permitted to reveal sacred things, except to the elect; and strangers must be admitted to this knowledge only after having submitted to the tests of initiation."

"The temples of the god of medicine," says a medical historian, "were generally very salubriously situated; sometimes on the summit of a hill, or the declivity of a mountain; sometimes on the shore, somewhat distant from the sea, and near a thermal spring or fountain of living water. Groves of trees refreshed the sight of the sick, and afforded to them cool and solitary retreats in their beautiful and spacious avenues.

The people came from all quarters on pilgrimages to those places sacred to the god of medicine. The sick and convalescent found there both agreeable and healthful diversions. The wholesome regimen to which they were subjected, the pure and temperate air they breathed, the faith and hope by which some were animated, the miraculous cures which were testified to—*all* united to affect their minds agreeably, and to exercise a happy influence on their constitutions.

Knowing the great influence of the imagination, these priest-doctors employed every means to control the minds of the patients, they not being permitted to interrogate the oracle until they were purified by washing, abstinence, fastings, prayers, and sacrifices.

"The patients who recovered went to their homes, blessing the divine author of their recovery, and leaving behind them testimonials of their gratitude.

Those who received no benefit, believing that their offerings were rejected because insufficient, redoubled their zeal and liberality; so that bad as well as good results added equally to the glory of the god and the profit of his ministers.

We have been thus explicit in describing the deceptive cunning of these ancient priest-doctors, in order to show the remarkable correspondence of the course pursued by them with that adopted by numerous modern illegitimate sons of Esculapius, who, in numerous cunningly selected salubrious and attractive localities throughout our country, have erected Homœopathic, Hydropathic, and Eclectic temples, in honor of the first propagators of their false and base assumptions; where, in return for liberal sacrifices of both time and money, fashionable, ignorant, and credulous votaries are made to believe, that health is secured and life prolonged by their inefficient and often injurious practice, rather than from the pure air of heaven, the life-giving fruits from the generous earth, the crystal streams from the ever-living fountains, and the beautiful mind-soothing prospects presented everywhere, above, beneath, and around us; which are the only true remedial agents for diseases of both mind and body, prescribed for and freely dispensed to his ungrateful children by the great physician, our Heavenly Father.

To return again to our medical history, it is evident from what has been stated, that, for a space of about 700 years, the science of medicine remained nearly dormant, wrapped up in a mysterious garb, in the hands of the Esculapiadæ or priests, whose crude doctrines were propagated and consultations held in the name of divinity in temples and caves dedicated to the to the god of medicine, Esculapius.

Finally, towards the close of the period under consideration, the foundation of the medical edifice, which had thus far been laid for the most part with mis-shapen material, taken at hazard and without taste or method, begins to rise, grand and majestic, gradually harmonizing in all its parts; for reason and genius have united to improve what accident and instinct had previously suggested.

The great philosopher *Pythagoras*, with his followers the so called Pythagorians, now appeared upon life's busy stage, and the scenes were once more shifted for the performance of another act in the great historical drama of medical progress. To the followers of Pythagoras belongs the honor of having been the first among the sons of Esculapius to reject with scorn the aid and support of an hypocritical priesthood.

Up to this time, the temples of Esculapius had been both schools for the student and dispensaries for the sick; but now the era of mysticism in medicine had passed away, and the reign of intelligence had began.

The gymnasiums no longer, as formerly, dedicated to physical exercise alone, became schools for the development of mind and the cultivation of medicine and the kindred sciences.

The next most distinguished laborer in the construction of the edifice, to which this new impulse had been given, was *Hippocrates*, born at Cos 469 years before Christ, of a family in which it was said the practice of medicine was hereditary, seven of them having been at different periods practitioners or teachers.

He was educated at Cos, one of the most noted Esculapian schools, after which he traveled into the various countries in which the science of medicine had been cultivated.

After his return to his native country, being rich in the materials he had collected, he published those immortal works that astonished the world, and made the physical science of man one of the most important branches of natural philosophy.

During his time, and for many years after, theoretical dogmatism exercised a tyrannical sway over the minds of physicians, compelling them to deviate from the more certain paths of observation and experience, and follow the then numerous false

beacon-lights set up by Hippocrates and other learned but imaginative writers, among whom may be mentioned as most prominent, Plato and Aristotle, whose doctrines have exerted a great influence upon the march of mind, and especially upon the progress of medicine.

An idea of the attractive beauty of the then extensively popular Platonic philosophy, may be drawn from the following quotations from the writings of this brilliant and imaginative philosopher.

"Is anything more rational than to think by the thoughts alone, disengaged from all foreign or sensible agency; to apply at once the pure essence of thought in itself, without the ministry of the eyes and ears; without, in short, any intervention of the body, whose slightest influence only troubles the soul and prevents its finding wisdom and truth."

"I comprehend no longer all the other learned causes that are offered us, but if any one comes to tell me what it is that makes a thing beautiful, or gives it loveliness of colors or forms, or other similar things; I leave aside all these reasons which only perplex me, and I assume myself without plan or art, and probably too simply, that nothing gives beauty but the presence or communication of the original beauty. I affirm, nothing, except that all things beautiful are beautiful by the presence of beauty."

It was at a time when Pythagoras recommended, in secret, to his disciples, and when Plato taught publicly, with all the prestige of his imagination and eloquence — that contemplative philosophy, which assumed that the senses transmit false, doubtful, or illusory impressions, and that the mind, to attain truth and certainty, must isolate itself as much as possible from the body: that a pupil of Plato, (afterwards tutor to Alexander the Great, and finally the greatest of ancient philosophers,) *Aristotle*, stepped forth into the arena of science, and boldly announced, for the first time, that famous axiom, "All ideas come from the senses," and thus introduced into the philosophic world a new principle in manifest contradiction to the received dogmas of Pythagoras and Plato.

It appears, says he, that the "remembrance of things often

repeated, creates experience: and experience, that is to say, every general notion which becomes fixed in the soul relative to the common properties of things, is the principle of science and art.

"To possess the knowledge that a remedy has been useful in the hands of Socrates and several others, is experience; but to know that such a remedy is good for all individuals of the same species, attacked by a given affection, is what constitues art."

The above quotations are sufficient to show, that there have been but few if any minds since his time, equal in capacity to that of this ancient philosopher; yet, for want of anatomical and chemical knowledge, his physiological conclusions, viewed by these great lights in medicine now burning so brilliantly, seem most absurd and unworthy of such an origin.

"The nerves," says he, "proceed from the heart, that viscus containing nerves in its structure, in its largest cavities; and what is termed the aorta is a nervous vein, whose extremities are nothing else than nerves.

"The principal nerves, are those of the ham, on which depends the power of leaping; and another double nerve called the tendon, and then the extensor and the nerve of the shoulder, which contribute to the strength of the body."

Such opinions as these from such a source seem most absurd, especially when we know, as we do, from history, that Aristotle had dissected a considerable number of animals of every species, and compares, with a sagacity astonishing for his era, the organic apparatus by means of which each of them lives and fulfills its various functions.

His position among his contemporaries may be inferred from the following quotation from an ancient satirist, who makes Mercury say: "Behold a man, who can tell you in a moment the duration of the life of a fly; to what depth the rays of sun penetrate the sea; and what is the nature of the soul of an oyster."

The last and most important portion of this period of the foundation of medicine, began about the termination of the wide-spread conquests of Alexander the Great; who, after subduing and bringing under subjection nearly all the physical

force of the then known world, was equally ambitious to control and direct the march of mind, by making the capital of his vast empire the great centre for philosophical discussions and the development of the arts and sciences.

He, therefore, caused to be collected from the various parts of his wide domain all the manuscripts upon scientific subjects, and especially those upon medicine, with which was formed that wonderful collection of half a million of volumes, the Alexandrian library.

It is also said of this great conqueror, that, in the midst of the turmoil and excitement of war, he kept up a scientific correspondence with Aristotle, his former teacher; and not only furnished the necessary funds for that purpose, but occupied himself in the collection of animals and plants, and every sort of rare object, from the depths of Asia, from which was formed the first great museum of natural history.

This, with the library, were placed at the disposal of literary and scientific men of all nations, who were invited to this great centre of literature and science, furnished with rooms in or near the library and museum, and supported by a fund set apart for that purpose.

Some were charged with the collection and arrangement of manuscripts and specimens in natural history; others, with scientific and philosophic investigations; whilst all were required to meet at the museum on certain days, at what were called literary contests or feasts, to deliver lectures and discuss various subjects; after which, those who succeeded best received public eulogies and rewards proportionate to their merit.

Galen, who was one of the most noted among those who devoted themselves to investigations, with special reference to the advancement of medical science, is the only author of that period whose writings on anatomy, physiology, and other branches of medicine, have come down to us of the present day.

It would seem, from what we can now infer from the writings of this, the most distinguished of the numerous talented physicians of the Alexandrian school, that the success which then attended the cultivation of medicine, was due to the authorization of dissections of the human body, never before practiced

without peril, but now not only permitted but encouraged even by sovereigns above the prejudices of the age.

Stripped of its mystic veil, the temple of medicine now takes a sudden progressive step.

All the materials for its construction, excepting that great corner stone, the discovery of the circulation of the blood, had been provided, and it only remained for William Harvey, one of our Anglo-Saxon progenitors who lived near the beginning of the 17th century, to bring forth from beneath the rubbish of demolished false opinions of that day, this much required constituent of a noble structure.

Thus it seems, that instinct, accident, and observation furnished the first materials for the foundation of our medical edifice, and that reason came next to polish, cull, and arrange these materials, and direct investigation and experience in laying the corner stone and the construction of its walls.

From this short review of medical progress during the age of its foundation, it will be seen that then, as now, two modes of acquiring knowledge were recognized:—

First. The logical or rational, which consists in establishing as a basis certain propositions or abstract principles, (*axioms,*) whence is deduced by reason the solution of particular causes or facts.

Second. The empirical or experimental, which consists in observing a great number of causes or facts, which being compared, classified, and made to harmonize, express certain propositions or abstract principles—*axioms.*

The first method, as it is seen, proceeds from generals to particulars, from the abstract to the concrete, from the axiom to the phenomenon.

The second, on the contrary, advances from particulars to generals, from the concrete to the abstract, from the phenomenon to the *axiom.*

Far from being opposed to each other, as was contended by ancient medical philosophers, these two methods fortify and enlighten each other; and the truth never takes hold of us in a more irresistible manner than when it is obtained by both routes at once, as is abundantly proven by the wonderful pro-

gress of the temple of medicine towards completion since this doctrine began to be recognized, as it now is, by our best medical writers and teachers.

An occasion like the present is not one admitting of a more extended view of historic medicine, we will now, therefore, after one other reflection, close our remarks upon this, to me, interesting subject, to do justice to which would require more time and study than most of us can command.

The facts upon this subject, as far as presented, show most conclusively that *Medicine*, like all the sciences based upon facts derived from the study of nature's undeviating laws and the careful observance of natural phenomena, has kept pace with the march of mind from its primeval state, when, like a child guided by the hand of parental love, its implicit confidence in the stability of truth had never been shaken to the present time, when far advanced on its journey in pursuit of knowledge, it has learned to watch for false beacon lights, deviating paths, and hidden pit-falls, which have so often led astray and retarded the progress of the ambitious and truth-seeking student, in his toilsome journey up the steep and rugged path to that Temple of ours, the pure light shining upon which is even now seen in the distance, indicating a nearer approach to that happy period when the rays of truth, unobstructed by false views and theories, will shine upon it with all their primitive brightness.

ARTICLE II.—*Pre-expulsion of the Placenta in Child-birth.* By C. GOODBRAKE, of Clinton, Ill., March, 1856.

I was sent for in great haste to visit Mrs. B., residing 1½ miles out of town, on the 21st of February, at 9 o'clock, A.M., and who, I was informed by the messenger (her father,) was in the eighth month of her second pregnancy, and had that morning slipped on the ice before the door of the house, and fell with her back across a hewn stick of timber about eight inches square. On arriving at the house, I found the woman lying across the foot of the bed on her left side; her hands and feet cold, pulse feeble but quick, and complaining of a dull heavy pain in the lumber region, over which her mother informed me there was considerable abrasion of the skin, caused by the stick

of timber, over which she had fallen. Upon inquiry she informed me, there was *very moderate* hemorrhage, and that she had only experienced two or three *slight* bearing-down pains since receiving the fall, but complained of a continuous pain in her back, and an uneasy sensation in her right side, and said something had torn loose in her side when she fell.

The sensation in her side, she described as a gurgling of water, and said it caused her to feel sick. In addition to these symptoms there appeared to be considerable nervous excitement.

After considering the nature of the case, and the symptoms as they presented themselves to my mind, I came to the conclusion, that by giving such remedies as would quiet pain, allay nervous excitement, and check the hemorrhage, the case might possiby be safely conducted to the full period of gestation. With this view, I prescribed a powder composed of morphine, camphor, and acetate of lead; ordered the woman to be placed properly in the bed; directed warmth to be applied to her hands and feet, and enjoined strict quiet.

I now stepped into an adjoining room to the fire; but the changing of the woman's position in bed, brought on violent pains with increased flooding, and her mother soon called me to the bed-side, and informed me that the water had come away. I immediately proceeded to make an examination, and to my surprise found the placenta already protruding through the external parts, and before I had time to make any further examination, there came on a violent pain and the placenta came away entire; the head of the child following the placenta so far as to press against the perineum.

I immediately placed my finger in the mouth of the child, and while in this position I distinctly felt the convulsive or gasping movements of the child, and in a few seconds the woman had another violent and protracted pain which expelled the child. When the child was born it did not breathe, but seemed to be affected with a general tremor, every muscle perfectly rigid, with arms and legs flexed, face bloated, and lips purple. I immediately instituted artificial respiration, when to my great satisfaction, and the unbounded joy of the relatives

of the little premature, it first began to breathe on its own responsibility and then to squall. After the birth of the child, the uterus could be felt above the pubes, firm and well contracted, and there was no more hemorrhage. Mother and child (female sex) are both doing well up to this time, March 10th.

I must not neglect to state, that about three months previous to the accident above detailed, this same woman received a fall by the upsetting of an omnibus, at which time she was considerably bruised and a good deal frightened. And she informed me that ever since that time she had experienced more or less of the "uneasy sensation" in her side, and which was only aggravated by her fall on the ice.

So far as I can now recollect, I have never read of a case similar to the one I have attempted to describe. I have been unfortunate enough to have several cases of Placenta Previa come under my care, consequently I have endeavored to neglect no opportunity, by reading or otherwise, to inform myself on the subject, and to my mind, at least, this case presents the following points of interest:—

First. The very slight degree of hemorrhage for a case of *reversed birth*, there being no more blood lost than in the majority of cases of ordinary labor. This might be taken as an argument in favor of the plan recommended by some writers in cases of Placenta Previa, namely, the detachment of the placenta to avoid hemorrhage.

Second. The child being born alive after the expulsion of the placenta. How was life sustained from the time the placenta became detached and expelled, until respiration was established?

ARTICLE III.—*Neuro-Pathology of Intermittent Fever.* By G. W. HALL, M.D., of Bainbridge, Indiana.

Some pathologists assert that all diseases commence by disturbance of the function of the solid parts of the machine, and first of all of the nervous system. This view of the origin of, and seat of disease, appears to be very plausible and correct, since the nervous system is so predominant, and regulates and supplies all with energy. The disease that I would here introduce as a representative of those thus originating, or in other

words, chiefly implicating the nervous system, is intermittent fever. The poison which produces this disease, after gaining access into the system, which it may do by being inhaled into the lungs, and there being in contact with the interior of the air cells, passes through and enters the circulation, where it may be distributed to the entire system, thereby deranging the nervous system by coming in contact with the extremities of the nerves; or the poison may act by making its first impression on the nerves in the lungs, whence it may travel through the entire nervous system, as electricity does a wire. As to the character or nature of the poison, all that we know is certainly hypothetical. It may enter the system in a gaseous form, which being sedative, or narcotico-irritative, produces by its effects on the nervous system a state of depression, or the first stage of the fever, which is soon followed by reaction; be this as it may, the nervous system appears to bear the onus of disease, the different organs of the body becoming deranged in function, as they do in neuroses, or other nervous disorders. It is well known that in hysteria and neuralgia, and other nervous diseases, the various organs of the body become deranged. Every observing physician krows the great influence of the nervous system over the circulatory and secretory functions, the modifications of secretion and calorification, which result from varying states of the innervation. We know that in our pernicious or congestive fevers, the nervous system is greatly at fault; all of the alarming symptoms are due to a want of a proper innervation, especially of the extreme vessels, which causes a retreat from the periphery of the body towards the centre, and this fever is nothing but a variety of intermittent, or autumnal fever. Hence, intermittent fever I class among the neuroses. I was led to give it this nosological classification from the therapeutical effects of the remedies prescribed, and the close observance of the effects therefrom. Quinine, arsenic, opium, iron, sulph. copper, strychnine, our chief remedies in intermittent fever. These are also our chief reliance in the treatment of nervous diseases.

In those localities where intermittent fever mostly prevails, we see also many cases of periodical neuralgia, which is con-

nected with, or has its origin in the same cause, and requires the same remedies for its cure. We may sometimes, by watching the effects of our remedies, arrive at the nature of the disease—for instance, we know that opium will relieve the pain in neuralgia, whereas, in that of inflammation, it may aggravate it, while bloodletting will aggravate neuralgia, and relieve inflammation.

The practice which I have found to give speediest relief is, when called to a patient in the exacerbation of fever, with hot skin, frequent pulse, severe pain in the head and back, to an adult I would give 3 to 4 grs. of opium, which in a short time (one or two hours) produces a relaxation of symptoms, and the patient is comparatively easy, then complete the cure with quinine. If there appears to be much biliary derangement, in lieu of the opium I would give ½ gr. morphine, with 10 or 15 grs. calomel, which produces the same mitigation of symptoms as the opium does, completely relieving the severe pains in the head and back; and if in four or six hours the bowels should not act, oil or sulph. magnesia should be given. I have never found the large doses of opium above specified produce any bad effect, even in the most robust and phlethoric individuals; on the other hand, it has never failed to give complete relief, given in exacerbation of the fever, it is always followed by a profuse perspiration, and, of course, relief of the febrile symptoms. 3 grs. of opium with 3 grs. quinine, given two or three hours before the expected chill, will prevent it as completely as three times the quinine without the opium.

I have above hinted at a subject, which I should like to see more thoroughly investigated. I should like to hear from the abler of the profession, especially from Professor N. S. Davis, through the pages of the *Journal.*

ARTICLE IV.—*Fœtal Malformation.* By W. W. Adams, M.D., of Clinton, Illinois.

The following case of malformation of a fœtus may not be uninteresting to the readers of the *Journal.*

On the evening of the 22d inst., at 10 o'clock, I was called to visit Mrs. M., in her eighth labor. She is a lady about me-

dium size, spare, and nervo-sanguine temperament. Upon inquiry, I found her health had been on the decline for the past three or four months, during which time she had suffered frequent attacks of nervous headache, with occasional chills, and a general feeling of weakness and debility. I examined the abdomen, and found it very much distended, hard and unyielding. No motion had been felt that indicated to her a living child. The pains came on at regular intervals, of ten or fifteen minutes, but the uterus was so much upon the stretch, that it seemed to have lost its power to act upon the fœtus. An examination per vaginum, satisfied me that the case was likely to prove an interesting one. A consultation was determined, and Dr. C. Goodbrake was called. After deliberation, Dr. G. ruptured the membranes; the water gushed forth in a torrent, wetting the Dr. to his shoulder, and lying in a pool around the ladies person, until it run through the bed and down on the floor in a considerable quantity. The pains now ceased almost entirely. The breech could be distinctly felt in the upper strait. There was no hemorrhage. We allowed the patient to rest for half an hour. Two ounces of a strong infusion of ergot was then administered, which produced slight contractions. The dose was repeated in fifteen minutes, and in a short time the contractions of the uterus were sufficient to expel the fœtus, with another enormous discharge of liquor amnii.

The child was not dead, as we supposed, but it survived only a short time, and was a very singular case of malformation. Both hands were placed upon the styloid process, at right angles with the radias; the styloid process of the ulna and pisiform bone forming a very neat shaped heel; the thumb, scaphoid and trapezium bones were entirely wanting; the metacarpal bone of the forefinger articulated with the styloid process of the radius. The lower extremities were so dreadfully deformed that it would take much time and space to describe the deformity. The extremities were little else than skin and bone; the abdomen was very large, and filled with water; the umbilicus was surrounded by a dark livid circle, of about two inches in diameter, which was raised at least half an inch; the anus had the same peculiar appearance; the sphincter ani absent; the

funis was about an inch in diameter, and distended with a clear transparent fluid, and when cut yielded but a few drops of dark blood; the edges of the ears were rolled forward, and had a crisped appearance, as if it had been done with a pair of heated tongs; the occipital bone was pressed under the parietal bone the entire length of the lamdoidal suture, leaving an offset of near one-eighth of an inch. I would consider this last a very interesting feature in the case. No doubt the pressure of the occipital bone upon the animal brain had been continuous for some time, and was the principal cause of the ascitic state of the body and smallness of the extremities.

My attention was first directed to this condition of the occiput by an article from the pen of J. M. Sims, M.D., of Montgomery, Alabama, under the head of Trismus Nascentium in young children. Since that time, I have seen and treated a number of cases of trismus, which, if recent, required but little treatment, and was relieved in a very few days by placing the child on its side upon a hard pillow. The bones soon gain their normal position, and the patient is relieved. But, if suffered to remain, a general wasting of the system takes place in defiance of every internal remedy, and death is the inevitable result.

Dr. Goodbrake and myself were called to visit a child not long since, between three and four months old, where we found the occiput in the same condition as in the above case. The parents informed us that it was at first a fine promising child, but soon became weakly and peevish, had frequent spasms; had taken a great deal of medicine, but continued to decline. When we saw it the extremities were very little larger than a man's finger. It died with spasms in about twelve hours. I would suggest to practitioners the propriety of examining the condition of the occiput when called to treat very young children; and where this condition prevails, ready relief will in most cases be obtained by placing the child on its side as above stated.

Clinton, Ill., Feb. 1856.

SELECTIONS.

Lectures on Experimental Physiology, delivered at the College de France, Paris, during the year 1855. By Professor CLAUDE BERNARD. From Notes taken at the Lectures by ANTHONY PENISTON, M.D., of New Orleans.

Gentlemen—The mode of instruction adopted in the College de France differs materially from that of a Chair of Physiology in a Medical Faculty. In the latter, the teacher must promulgate his opinions dogmatically, considering the science as settled and complete. Here, on the contrary, we must consider every question as being open to investigation, and the science of physiology itself as if it were imperfect and unsettled. They must search among the records of the past, and must build up their fabric from the labors of others: we must look on the future destinies of our science. Let ours be the hope of extending its limits. Two methods of contributing to the progress of Physiology now present themselves:—

1st. To make new researches.

2d. To criticise old doctrines by submitting them to the test of experiments.

The celebrated Le Maistre said, that more discoveries were due to chance than to all the researches of the learned; he even said, that in order to make new discoveries it was necessary to be ignorant.

On the other hand, Bacon and his school have contended, that there is a method with certain rules by which the limits of science can be extended and new discoveries made.

That those principles are useful to guide us in our researches there can be no doubt; notwithstanding, experience has not proved that those who knew them best were the most fortunate in their application.

During the course of these lectures we shall investigate the mode of action of divers substances, which exercise a notable influence on the phenomena of life.

Two conditions are requisite to maintain life. 1st. The organism, that is to say, the integrity of all the organs, of the tissues, and their functions. 2d. The medium in which we live, comprising oxygen, heat, and the food requisite for our organism. But, at the same time, that we must study those chemical changes necessary to maintain life, so also must we investigate the nature of many substances, which, though not

necessary to life, yet may be said to exercise a marked influence on our organization, suspending or destroying its functions.

Thus the numerous class of poisons and medicaments are perturbing agents, while oxygen, on the contrary, may be styled a conservative agent. But the study of medicines and poisons constitute the domain of therapeutics and toxicology.

Here we shall select a few of the most active substances, such as strychnine, nicotine, morphine, &c., in order to study their effects under a purely physiological point of view. We shall make use of them, as of a re-agent, which, by a specific mode of action, localized in some one tissue, will enable us to acquire precise notions on the nature of those tissues thus acted upon.

Physiology has no other aim or object than to analyse the phenomena of life.

In order to distinguish the part which appertains to each organ, amid the complicated phenomena of life, it has occurred to physiologists to destroy one organ, or tissue, and then to observe how the organism is affected by its absence.

Thus, by cutting a nerve, we destroy the functions of that nerve, and from it results either loss of motion or of sensibility, according as it is a nerve of motion or sensation.

But this process is exceedingly rude, and then when it becomes necessary to penetrate very deeply into adjoining structures in order to destroy some special organ, the morbid process may become so complicated as to involve the result in considerable obscurity.

When we examine the poisonous effects of certain substances, we ascertain that they act by destroying some one system of the organism, or some one tissue of the body. This point once settled thus becomes an excellent means of ascertaining the properties and functions of the different tissues. Thus, a substance of which the composition is not well known, but which possesses most active properties—the celebrated Woorara poison—exercises a particular action on the nervous system, it produces death without any apparent suffering, the animals manifesting no pain.

If we take two frogs, and sacrifice one by cutting off its head, we shall observe that, at a low temperature, the nervous system retains its properties during several days, and may react on the muscles under the influence of any exciting cause, such as galvanism or electricity.

On the other hand, if we poison the other frog with the Woorara poison, the excitability of the nervous system ceases at once: this poison annihilates the nervous system, and death is caused by the total abstraction of the nervous influence.

Now, it is utterly impossible to remove by dissection the whole of the nervous system; at the same time we should lacerate and destroy all the surrounding tissues. But here we have a substance following the nerve in its minute ramifications to its ultimate fibrilla, at the same time that it respects completely the surrounding organs.

But let us return to our experiment of the two frogs. On the one poisoned with Woorara, galvanism produces no effect on the nervous system, yet when applied locally to the muscles it produces contraction. On the contrary, if on the decapitated animal we isolate a nerve, and touch that nerve with a galvanic current, we observe convulsive movements in the whole limb. This experiment proves that Woorara destroys at the same time the motor and sensitive system of nerves, but that it does not affect muscular irritability. Thus the question mooted by Haller, more than a century ago, that muscular irritability is independent of the nervous influence, is now finally settled. Marshall Hall still maintains that nervous excitability and muscular irritability depend one on the other.

But let us go one step further. The experiment with the Woorara poison proves, moreover, that the irritability of the muscular system is increased by the effect of the poison, and persists nearly twice as long as it does on the decapitated animal. But it may be objected that no two frogs can be in the same identical condition, and that if the experiment had been reversed, the result would also have been different. The following experiment must remove all objection of that nature. Let us take a frog, and while it is in perfect health we put a ligature around the femoral artery on one side, and then poison the animal with Woorara. Now, it follows that the blood cannot carry the poison to that leg, and what is the result? That muscular irritability disappeared at the end of five days in the leg where the poison does not circulate, while it persisted ten days in the other leg. We may then safely conclude that the Woorara poison destroys nervous excitability at the same time that it increases muscular irritability.

There is yet another consequence to be deduced from our experiment. Let us examine the heart of the frog poisoned with Woorara; you will observe that it still beats perfectly. This proves that the heart is independent of all nervous action; and is in that respect quite an exception to the general rule. This is the reason that though separated from the brain and spinal marrow the heart still contracts.

You perceive from this experiment how we can make use of poisons to analyze the phenomena of life, they become, in the

hands of the experimental physiologist, a re-agent, exercising a determinate action on certain parts of the organism, just as the chemist uses his tests in the laboratory to analyze and separate different substances. If it be asked what science we would promote, what good can result from our researches; we should answer, that this art is especially destined to throw light on medical science. It has been said that medicine and physiology are independent sciences, that the latter is more curious and entertaining than useful to the physician; for, say they, to what physiological state does fever correspond? To that we should answer, that if physiology was more cultivated we should then know what particular morbid state or derangement of which set of organs the fever was owing to.

Thus it is we know at present that diabetes has its physiological correlative. A few years ago, if it had been asked, is diabetes the result of some functional disorder producing sugar as a substance entirely foreign to the system, or is it produced by some mal-assimilation of the digestive organs, what would have been the answer? At this day, we know that the presence of sugar in the urine is owing to the exaggeration of a strictly physiological function, for in the normal state sugar is secreted by the liver. We know, moreover, that we can render animals diabetic by introducing a sharp pointed instrument into a certain portion of the medulla oblongta.

Fever also can be produced by some functional disorder. Thus, if we cut certain *filaments* of the great sympathetic nerve, fever supervenes in that part. (Here Mr. Bernard shows a rabbit on which he has made a section on one side of the sympathetic nerve distributed to the ear, and the result is plainly visible in the increased heat and redness of that ear compared with the other.) It has also been ascertained that if a section be made of a certain part of the great sympathetic distributed to the thorax or abdomen, we can produce pleurisy in the first, and peritonitis in the second. Undoubtedly there are many morbid states which we cannot explain by physiological laws as yet known; but it cannot be denied that the progress of physiology is destined to throw great light on those pathological conditions which are now the most obscure.

LECTURE II.

In order to show the relative bearings of physiology and pathology, it may not be uninteresting to give a short sketch of the differet theories and opinions on the nature of diabetes. This disease has been known from the most remote antiquity;

but it was characterized in a very vague manner, and its symptoms very imperfectly described. Thus, a person was said to be diabetic when he voided unusual quantities of urine, accompanied with other general symptoms, such as emaciation and loss of strength. On account of the latter symptoms, it has been likened to phthisis, one being of the lungs, the other of the kidneys, but the presence of sugar in the urine was long unknown. When this peculiarity was ascertained, a distinction was made between simple diabetes, or polyuria, and diabetes mellitus. In the present state of science this distinction is not admitted, diabetes being always characterized by the presence of sugar in the urine. The celebrated Willis was the first who said that the urine of diabetics was sweet and had the taste of honey. Rollo, who came afterwards, thought that the presence of sugar was due to a vitiation of the gastric juice, which changed the food into sugar instead of transforming it into chyle. Nicolas and Gueudeville, who wrote on the subject towards the year 1803, placed the seat of the disease in the intestines. They thought that chyle, being a nitrogenous fluid, produced by digestion, the diabetic sugar was nothing more than chyle deprived of nitrogen. In 1813, Mr. Chevreuil showed that diabetic sugar was similar to that produced from starch, which is transformed into sugar by the process of digestion.

Mr. Bouchardat thinks that sugar is formed in the stomach, and that it is absorbed directly. Mr. Mialhe has propounded another theory. Having ascertained that when diabetic sugar, or sugar produced from starch, is heated in presence of an alkali it is completely destroyed, Mr. Mialhe thought that sugar was a normal product of digestion, and that if the blood was not sufficiently alkaline to destroy the sugar, the person became diabetic; therefore, said he, the cause of the disease is in the blood, from which he concluded that the treatment should be by means of alkaline remedies.

But setting aside all these conflicting theories, formed, most of them, *a priora*, when we undertake to account for the presence of sugar in the urine, we find that it can only have its origin in two ways. Either it is introduced as food, or is fabricated abnormally in the system. We shall endeavor to show that in the normal state we secrete sugar internally, but that physiologically this sugar disappears before it reaches the kidneys. Diabetes, then, is nothing more than a deviation of a physiological state. Before considering the origin and production of sugar in the system, we must premise that chemists recognize three different kinds of sugar, viz.:—

Cane sugar.
Grape sugar.
Starch sugar, or glucose.

Cane sugar differs from the others in this, that the alkalies have no action on it, but the acids transform it into grape sugar, or glucose.

The alkalies have a particular action on grape sugar and glucose—thus, if we take a solution of potassa, and add to it some diabetic sugar or glucose, and then expose it to heat, the liquid takes a brownish hue, the sugar disappears and is transformed into various acids. On the contrary, ordinary cane sugar, being heated with potassa, does not alter its color. Pure cane sugar, boiled with an acid, is transformed into grape sugar. The following test is considered one of the best to detect the presence of sugar in the urine: Take a solution of tartrate of potassa and copper, with an excess of potassa, put a few drops into a test tube containing diabetic sugar, and expose the whole to the flame of a spirit lamp; the liquid, which is previously of a beautiful blue, speedily changes color, giving rise to an orange yellow precipitate.

Cane sugar, exposed to the same test, gives no result, as it exercises no chemical action on the tartrate of copper. Being exceedingly delicate, this test can be used to ascertain the proportion of grape sugar contained in a given solution. When we use the test for grape sugar, in the way above mentioned, the reaction which takes place is called a reduction of the liquid. The chemical change which takes place is as follows: When either grape sugar or glucose is heated they are converted into various acids. Now, this liquid tartrate of potassa contains a salt of duetoxide of copper, and when the sugar is decomposed, it takes away one equivalent of oxygen from the copper, which thus becomes a salt of protoxide of copper, and that being insoluble is precipitated. This liquid, which is known under the name of Barriswill's test, only gives this result when in presence of grape sugar or glucose. Potassa has also been used as a test, but it may lead us into error, as a solution of tannin heated with potassa gives the same brown color as a solution of glucose.

When the liquids, which we wish to test for sugar, are colored—as blood, for instance—we must filter them through bone black; this takes away the coloring matter and the other albuminous and organic substances, but in no way affects the sugar; we thus obtain a pure and transparent liquid, which can be readily tested by the method above mentioned. Another method, which allows us to ascertain the presence of sugar, is

to produce fermentation by means of yeast, the sugar being decomposed into carbonic acid and alcohol, the latter burning with a peculiar bluish flame.

Polarized light has also been used to distinguish certain characters appertaining to grape and cane sugar.

Having thus explained the different kinds of sugar, and the tests by which it can be recognized, we are now prepared to investigate the origin and production of sugar in the system.

We have ascertained, beyond a doubt, and our experiments will prove, that sugar is formed from the blood, but that its production is totally independent of the species of food taken into the stomach. No sugar is found in the blood before entering the liver, but its presence in the blood which comes out of the liver is easily ascertained. The liver itself contains sugar in considerable quantity, and is the only organ possessing that property. It was long thought that the presence of sugar in the urine of a diabetic person, was owing to imperfect digestion of some particular kind of food; hence, physicians directed their exclusive attention to the diet of those patients, until it was almost universally admitted that all those substances which contained starch in any form increased the disease. Now, however, we must place the disease in some functional disorder of the liver, the nature of which we shall endeavor to elucidate in the progress of these lectures.

The existence of sugar in the liver being settled beyond all doubt, it was and is still objected by some physiologists, that this sugar did not take its origin in the liver, but having been introduced through the medium of absorption, was only localized and concentrated in the liver. That a dog, for instance, having eaten bread or some other substance containing starch, which is capable of being transformed into glucose, would have this sugar carried to the liver by the general circulation, and there it would be liable to remain a considerable time. A great deal has been said of this localization of different substances in the liver; thus it has been reported that mercury, copper, arsenic, &c., had been found in the liver of persons who had taken those substances during life. Therefore, some physiologists, reasoning by analogy, said it would not be strange if the sugar had reached the liver in the same way. But whatever may be the fact as to those other substances, the best proof that sugar is not introduced in that way, is, that we find it in the liver of the fœtus before any food has been taken into the stomach. Here are several livers taken from calves at the fourth or fifth month of gestation; you see that our test plainly indicates the presence of sugar: moreover, when submitted to

the process of fermentation, alcohol will be produced. Certainly it cannot be said that this sugar was introduced by means of the food, for the stomach had never received any.

It might be said that the mother takes in food, and that this sugar may be introduced into fœtal circulation by vascular communication through the placenta. But it is well known that no such communication exists between the mother and the fœtus; moreover, the blood globules of the fœtus are larger than those of the mother, and could not circulate in the capillary vessels of the latter.

Another fact comes in to settle the question. The function of the liver which produces sugar, does not begin until the fourth or fifth month of uterine life; before that period no sugar is found in the liver, though the same relation exists between the mother and the fœtus, as far as nutrition is concerned, before that period as well as afterwards.

There is yet another proof that sugar is not simply localized in the liver; for those substances, such as arsenic, mercury, &c., which have been said to be found in the liver, when once they penetrate into the liver, remain there indefinitely. Sugar, on the contrary, disappears from the liver as soon as the function of the liver ceases. Thus, when animals die of disease, their liver contains no sugar. This is the reason why no sugar is found in the liver of the subjects commonly brought to our amphitheatres.

Although there be no relation of cause and effect between the nature of the food and the formation of sugar in the liver, yet innervation exercises a direct influence on this function. When a section is made of the pneumogastric nerves, the formation of sugar in the liver ceases at once. Here is a rabbit on which were cut those two nerves yesterday evening: you see he has survived the operation; we shall now sacrifice him, in order to prove that all traces of sugar have disappeared from the liver.

We must therefore admit that sugar is formed in the liver through a special function appertaining to that organ, and subject to certain physiological variations, according to the state of the system.

2d. That this function commences at a certain period of uterine life.

3d. That, during disease, the formation of sugar either diminishes or ceases completely. This is an excellent method of ascertaining whether an animal died in a state of health or in consequence of disease, for, in the former case, sugar would be found in the liver, and in the latter not.

Here is the result of an analysis, giving the proportion of sugar found in the livers of different animals:—

Human fœtus, at 6½ months,.....0.77 per cent.
Fœtus calf, from 7 to 8 months,.....0.80 "
Fœtus of a cat, at term,.....1.27 "

On the other hand, the following analysis shows that the different varieties of food exercise very little influence on the production of sugar in the liver:—

A dog fed exclusively on meat,.....1.90 grammes per cent.
Another fed the same,.....1.40 " "
A dog fed on meat and bread,.....1.70 " "
Another fed the same,.....1.30 " "
A dog fed exclusively on starch,...1.88 " "
Another fed in the same way,.....1.50 " "

The liver, you know, is a large glandular structure, situated in the abdomen, and placed as a sort of barrier between the digestive system on the one hand, and the general circulation on the other. The liver receives, by the vena porta, the blood which comes from the digestive organs; this blood traverses the liver, undergoing divers modifications, and then comes out by the hepatic veins, which empty themselves into the inferior vena cava. Besides these two sets of vessels, we have the lymphatics and the hepatic artery. The latter exercises no influence on the function of the liver, but only serves for the nutrition of the substance of the liver, and does not afford materials for the different products of that organ. Sugar is formed from materials furnished by the blood of the vena porta; this production of sugar is a secretion analagous to others in the animal economy.

Thus we see that several functions appertain to the liver, for we know already that it produces bile. The liver is an organ which exists in all animals. For a long time it was thought that the liver only served for the production of bile; and, as it was said by physiologists, that bile was useless in the animal economy, the argument was that the liver itself was unnecessary.

But, in the first place, it is now well ascertained that bile has most important functions in the process of digestion, and, moreover, the liver fulfills other purposes connected with the respiratory functions through the production of sugar.

It is said, that an organ which secretes, must be provided with an excretory duct. Now that is true so far as regards the secretion of bile, but there is no special duct for the elimination of sugar. It mixes with the blood coming from the liver, and is thence carried to the lung.

How does this secretion take place? All secreting organs are formed of cells, and this is the case with the liver. These cells are disposed in masses, which, by compression, assume a spheroidal or polyhedral form, constituting the lobules of the liver. At the centre of each lobule the commencing radicles of the hepatic vein take their origin; the branches of the vena porta, on the contrary, ramify on the surface of the lobules. The biliary ducts commence within the lobules by numerous ramifications, which form a closed network or plexus, occupying principally the outer portion of each lobule. The blood which enters the liver undergoes very important modifications in traversing the cells situated between the ultimate ramifications of the vena porta and the origin of the hepatic veins. There it is that the blood is divided into those component elements which produce sugar on the one hand and bile on the other. But these two secretions are entirely distinct, for there are two sets of cells, one forming the bile and the other the sugar; the bile being composed from the nitrogenous elements of the blood; the sugar, on the contrary, from the albuminous or non-nitrogenous elements.

The production of those two substances is not concomitant—that is to say, when the formation of bile is most active, that of sugar is at its lowest point, and *vice versa*.

The exact relation of the biliary ducts to the cells of the liver has never been well ascertained. Though coming from an organ containing sugar, the bile itself contains none, which proves that the two excretions are independent.

In the mollusca, snails, and others of that class, it can be seen that the bile, or rather the liquid coming from the liver, does not always present the same character. When digestion is going on, the duct which comes from the liver furnishes a very sweet liquid; then this liquid ceases after a certain time —it changes color from white to green, becomes exceedingly bitter, and no longer retains any traces of sugar. Thus the production of sugar takes place during digestion; that of bile, on the contrary, takes place after digestion. This is contrary to the old admitted opinion, that bile was produced during digestion. But, that this is not the case, can be easily demonstrated on a dog having a biliary fistula. Here is the operation which must be made to establish a biliary fistula on that animal. Make an incision in the right side, enabling you to pass a ligature around the ductus communis choledochus, which is thus prevented from emptying into the abdomen. You must then draw out the gall bladder, and attach it to the skin, where it becomes adherent; lastly, you make a small puncture, and then

the gall bladder itself becomes an excretory duct, by which the bile runs out. By this means you can ascertain that, during digestion, bile runs in very small quantities; but that about seven hours after a meal, much larger quantities of bile are excreted. During digestion bile is poured into the intestinal tube, but it comes from the gall bladder, into which it has been accumulated beforehand, as a sort of reservoir. Sugar, on the contrary, is produced about three hours after an animal has eaten.

All animals are not alike provided with a gall bladder; the horse, for instance, has none, but the ductus communis choledochus is very large, and provided with a sphincter, which thus retains the bile.

In certain insects the liver does not exist as a distinct organ, but we find in its stead two series of glands, of which those situated above secrete bile, and those below secrete sugar, while both pour their secretions into the intestinal tube. We have thus far arrived at the following conclusions, which may be stated as general propositions.

1st. There are two functions in the liver, but they do not seem to be the result of the same anatomical element—one producing sugar, the other bile.

2d. These two secretions are neither permanent nor constant, but intermittent, there being oscillations in the secretion of sugar as well as bile.

3d. Sugar is not an excretion like urine, for in the physiological state it should not appear outside the system; it is only pathologically, as in diabetes, that sugar is excreted with urine. The following is the origin and progress of sugar in the system: After its production in the hepatic cells, sugar comes out of the liver by the hepatic veins; it then reaches the inferior vena cava, where it mixes with the blood coming from the lower extremities; from the inferior vena cava, the sugar passes into the right side of the heart, whence it is driven into the lung. There, the sugar is brought into contact with the atmospheric air, and is destroyed by undergoing a peculiar species of combustion, so that when the blood comes out of the lung it no longer contains any sugar. The quantity of sugar is at its summum in the interval between two meals, when digestion may be said to be most active; so that, though the secretion be constant, there are periods when it is more considerable than others.

The proportion of sugar in the blood of the hepatic vein is about one per cent., but in the right ventricle (and it has been still further diluted) the proportion is about $\frac{1}{3}$ per cent. At the beginning of digestion, the blood of the vena porta is supplied

on the one part from the capillary terminations of the mesenteric arteries, and on the other from divers soluble matters and liquids absorbed in the intestinal tube. On this account the liver receives, at that moment, a much larger quantity of blood than during abstinence, the secretion of sugar is rendered more active, and then the proportion of sugar in the hepatic vein may be as much as 1½ or 2 per cent. The quantity of sugar being thus considerably increased, it may happen that all will not be destroyed in the lung, and then arterial blood will contain a small portion. This is generally found to be the case where an animal is sacrificed during digestion, for, whatever be the food, some sugar will be found in the whole circulation, but always in much greater proportion in the blood of the hepatic vein and vena cava. This ocillation, in the production of sugar, is very important, as it is found even in the pathological state, for it has been observed that some persons are diabetic at certain times and not at others.

The appearance of sugar in the urine may depend upon two causes; either its destruction in the lung is not sufficiently rapid, or its production is abnormally increased.

It being thus settled, that the sugar takes its origin in the liver, while, on the other hand, it is destroyed in the lungs, we perceive at once that a most intimate physiological relationship must exist between those two organs; and pathological anatomy has verified this law, for diabetic subjects have generally important lesions in the lung as well as in the liver.

In the physiological state, bile never contains any sugar. If you sacrifice an animal and examine the bile instantly, it will not contain any traces of sugar. But, on the other hand, if you were to examine bile taken from an animal which has been dead for some hours you may find evident traces of sugar. The reason is this: when life ceases, the liver becomes subject to purely mechanical laws, and as sugar has a strong endosmotic power, that which is contained in the hepatic cells may easily pass into the biliary ducts, whereas during life this is never the case.

In studying the functions of the liver, the following propositions present themselves for investigation:—

1st. What alterations may supervene pathologically in the cells of the liver?

2d. What changes take place in the composition of the blood while passing through the liver?

3d. What influence is exercised on the functions of the liver by the purely mechanical phenomena of the circulation?

4th. What is the influence of the nervous system on the functions of the liver?

As to the nature of the alterations which the hepatic cells may undergo, we know but little. The fatty liver is observable among certain animals fed in an artificial manner, producing a metamorphosis in the cells of the liver which are filled with large quantities of fat. The liver, however, still continues to secrete sugar, two analyses presenting, the one case 1, the other 1½ per cent. of sugar, which is even beyond the ordinary proportion of sugar in the liver. Besides this, the liver is subject to a great variety of degenerations and morbid productions; but these alterations generally leave a portion of the organ in a healthy state, and this continues to supply the wants of the economy.

On the influence exercised by the composition of the blood on the production of sugar in the liver:—

As the composition of the blood in the vena porta varies according to the nature of the food, it is important to know what influence those changes may exercise on the production of sugar. This question has been raised especially in the treatment of diabetes, where it may be useful to know what kind of food produces the least sugar. Formerly physiologists thought that sugar in diabetes was produced exclusively by vegetable food, and consequently the deduction that those patients would be most benefitted by nitrogenous articles of diet and animal food, while, on the other hand, bread was supposed to furnish a large proportion of sugar. But as we have now ascertained that the production of sugar exists in the liver, what becomes of the sugar introduced into the system from outside?

Before answering this question, we must know what would be the consequence of prolonged abstinence on the production of sugar.

When an animal is entirely deprived of food, we have ascertained that sugar gradually disappears from the liver. Prior to this, however, sugar can only be produced from the materials furnished by the blood contained in the vena porta, for, in the absence of all food, the intestines can furnish no materials to the vena porta through the different absorbent vessels; therefore the blood, circulating in the vena porta, is furnished exclusively from the blood of the mesenteric arteries passing into the portal circulation through the intermedium of the capillaries. Thus we prove, that the production of sugar is independent of the nature of food. In an animal, exposed to complete abstinence, the liver continues to secrete sugar until the animal loses 4-10ths of its weight: at that period, there is a complete paralysis of the digestive organs, and if it were attempted to nourish the animal, its life could not be saved. Dogs, thus

exposed to starvation, die from the twentieth to the twenty. second day; Guinea pigs, from the twelfth to the fifteenth day.

Touching this question of prolonged abstinence, it may not be uninteresting for us to learn what takes place in those hibernating animals which are known to pass whole months without eating. Valentin, who has experimented on the marmot, an animal inhabiting the higher regions of the Alps and Pyrenees, has ascertained that those hibernating animals are not in the condition of an ordinary animal deprived of food. Having kept one of these marmots, which slept 39 days without eating, he then sacrificed it, and found that the liver contained 2.87 per cent. of sugar. He found in the intestinal tube of those animals a peculiar whitish substance, which was continually secreted by the stomach, in a manner peculiar to those animals. There was then re-absorption of this matter in the alimentary tube, and nutrition was thus kept up at the expense of the animal itself, for it continually diminished in weight. In our next lecture we shall consider the influence of food on the production of sugar.—*N. O. Medical News and Hospital Gazette.*

[To be continued.]

BOOK NOTICES.

American Journal of Pharmacy.

This excellent Journal for March, 1856, is received. It is filled, as usual, with valuable and interesting matter. It contains a notice of the new edition of the Pharmacopœia of the United States, which we copy for the benefit of our readers who may not have seen the work:—

"Since the publication of the first Edition of the Pharmacopœia of 1820, the present is the first instance when it has been found necessary to issue an inter-periodical edition. The Committee of Publication have not felt justified in making additions to the work of preparations of recent origin, nor of new drugs, and have limited their labor to the correction of some few errors of the previous edition, and to a few changes (in the processes for Solutions of Nitrate of Iron and Citrate of Magnesia) which seemed to be much needed. In 'accordance with an expressed wish from several respectable sources,' this edition has been published in a cheaper form, so that it is within the reach of all;

and it is to be desired that in the future Decennial revisions, attention will be given to this point, so essential in effecting the wide adoption of the Pharmacopœia as the authorized guide book for the Apothecary in the United States. The book is well printed, and the price is but one dollar, the previous edition being $2,50. Every apothecary and physician should obtain a copy of it to be able to tell what are the preparations officially recognized as officinal."

Clinical Lectures on the Diseases of Women and Children: By Gunning S. Bedford, A.M., M.D., Professor of Obstetrics, the Diseases of Women and Children and Clinical Midwifery in the University of New York. "*Medicus curat morbos, natura sanat.*" Second edition. New York: S. S. & W. Wood, 1856.

From the preface to the second edition, we learn that the first edition was exhausted in a period of three months. He tells us, in the first edition, that these lectures have been reported by Drs. Palmer Woodcock, H. C. Cooper, and Thos. A. Gregory, and that most of them have been published in the *American Lancet.* A medical gentleman, in whose judgment we have great confidence, says that "it is a pity they had not been allowed to remain there," an opinion in which we fully coincide.

J.

On Bandaging and other Operations of Minor Surgery: By F. W. Sargent, M.D., Member of the College of Physicians of Philadelphia, &c., &c. New edition—revised and enlarged, with one hundred and eighty illustrations. Philadelphia: Blanchard & Lea, 1856.

The author professes to present information in reference to subjects slightly alluded to in systematic courses of lectures, or in most of the published treatises on the science of surgery, and yet he says that "originality can scarcely be expected in a work of this kind, excepting, perhaps, in its composition." The book contains much that is useful to the young surgeon, but, in our judgment, is open to the same objection that may be urged against all of the compends, abridgements, &c., of the different branches of medicine. They are likely to divert the attention from larger and more complete works, while, at the same time, they only partially supply the wants of the practitioner.

The book is for sale by Keen & Lee, Chicago, Illinois. J.

How to Nurse Sick Children: Intended especially as a help to the Nurses at the Hospital for Sick Children, but containing directions which may be found of service to all who have the charge of the Young. New York: S. S. & W. Wood, 1856.

This little book has been laid on our table, and we should be very glad to see it in every sick room in our city, for it is full of useful hints and valuable directions for the management of sick children. J.

A Treatise on Medical Jurisprudence. By FRANCIS WHARTON, author of a Treatise on American Law, &c., and MORETON STILLE, M.D., Lecturer on the Principles and Practice of Medicine, in the Philadelphia Association for Medical Instruction. Philadelphia, Kay & Brother, 17 and 19 South Fifth Street, 1855.

This work is the joint production of both medicine and law. Of the legal author, we know less than of the medical, although we believe he holds a prominent position in his profession. Dr. Stille, the representative of our own profession, was a young man of rare abilities and of very superior attainments. In his death, which took place on the 20th of August last, the profession sustained a severe loss.

The work is divided into six books, the first of which treats of mental unsoundness; the second, questions relative to the fœtus and new-born child; the third, questions arising out of the difference of sex; the fourth, of questions relative to identity; the fifth, of questions relative to the cause of death; and the sixth, of the legal relations of homicide, fœticide, and infanticide. The second, third, fourth, and fifth books, are by Dr. Stille.

The work is full and complete, so far as the wants of the medical witness is concerned; and we unhesitatingly recommend it to our readers.

For sale by D. B. Cooke & Co., Chicago. J.

Report of the Pennsylvania Hospital for the Insane, for the year 1855. By THOMAS S. KIRKBRIDE, M.D., Physician to the Institution. Published by order of the Board of Managers. Philadelphia, 1856.

The total number of patients in the hospital during the year,

was 399. The highest number at any one time, was 242, the lowest 223; and the average number under treatment, during the whole period, was 233. Of the patients discharged during the year 1855, were

Cured,	101
Much improved,	13
Improved,	23
Stationary,	11
Died,	21
Total,	169

The report contains valuable statistical tables, presenting a carefully prepared digest of all the cases received into the hospital, from its opening in 1841 to the present time. J.

The Practitioners' Pharmacopœia and Universal Formulary, containing 2000 *Classified Prescriptions, selected from the practice of the most eminent British and Foreign medical authorities, with an Abstract of three British Pharmacopœias, and much other useful information for the practitioner and student.* By JOHN FOOTE, M.R.C.S.—London. Revised, with corrections and additions, by an American Physician. New York; Samuel S. & William Wood, 1855.

This work is of a class for which we have no partiality. The well-educated physician will combine his remedies to suit the special conditions of individual cases. There is, however, in this little book much that is useful, as will be inferred from its title page. J.

A Practical Hand-Book of Medical Chemistry. By JOHN E. BOWMAN, F.C.S., Professor of Practical Chemistry in King's College, London. Second American, from the third and revised London edition, with illustrations. Philadelphia, Blanchard & Lea, 1855.

We have received from the publishers a copy of the above work, which we take pleasure in acknowledging, and also in recommending to our readers and to students of medicine. For the benefit of those not acquainted with it, we extract a portion of the preface to the first edition, from which an idea will be gained of its scope, &c.

"The want which, as a teacher of Practical Chemistry in a Medical School, I have long felt, of a small manual containing instructions for the examination and analysis of urine, blood, and a few other of the more important animal products, both healthy and morbid, and comprising also directions for the detection of poisons in organic mixtures and in the tissues, was my chief inducement in undertaking to write the present little work.

"In doing this, my endeavor has been, to supply a book that will be found useful, not only to the Medical Student, but also to the Practitioner, to whom the value and importance of the applications of modern chemistry and microscopic analysis to his art, are becoming daily more and more apparent."

The present edition embodies all the new discoveries and improvements in medical chemistry up to the time of its publication. J.

Tully's Materia Medica and Pharmacology, for January, 1856, is received. This No. completes 954 pages of the work. It is published at 25 cents per No. by Jefferson Church, M.D., Springfield, Mass.

Some of our readers may wish to know what Dr. Tully says of veratrum viride. It is considered in connection with sanguinaria vernalis and lobelia inflata, in the Proem to the class called by the author Erethistica.

The following is the language of the author:—

"I have repeatedly seen a very obvious, indeed prominent degree of that part of an erethistic operation, on which the primary part of my definition is founded, produced by veratrum viride and sanguinaria, more frequently in children, but repeatedly in adults. I do not feel equally confident of ever having seen them produce those effects, in any decided degree, on which the secondary part of my definition is founded; and yet a priori, I should sooner expect they would produce them than any other. The term acrid-narcotic as employed by authors, has reference as much to such articles as veratrum viride, sanguinaria vernalis, etc., as to any other, in which an individual active proximate principle, as sanguinaria or sanguinarine for example, is at one and the same time acrid, and as is supposed, narcotic. But do veratrum viride and sanguinaria or the active proximate principle of the latter, viz.: sanguinaria or sanguinarine (I do not pretend to say anything of

the active proximate principle of the former, whatever it may be, for it has never been isolated, and therefore its nature and character has never been determined) possess any true and genuine narcotic power? Does either veratrum viride or sanguinaria vernalis, ever prove directly antirritant, anodyne, or soporific? Is not such an operation essential to a true and genuine narcotic? Although I once entertained a different opinion, I believe, mainly on the ground of authority, yet I am now obliged to doubt whether either veratrum viride or sanguinaria vernalis, or the active principle of the latter, ever prove directly antirritant, anodyne, or soporific. As now appears to me, their ultimate effects vary very considerably from the ultimate effects of the ordinary true and unequivocal narcotics. But do they ever produce either of the sets of effects which constitute the primary part of my definition of erethistics; or even the set of effects which constitute the secondary part of my definition? At the time that my professional pupils and myself were investigating the powers, operations, and effects of these agents, I had no very definite and precise ideas even of a narcotic power, and much less of an erethistic power; so that none of the observations made at that time, are now available towards settling the present question. But the term acrid-narcotic, I believe, is not unfrequently applied to articles affording much less evidence of a true and genuine narcotic power than sanguinaria vernalis and veratrum viride. Now, the only doubt in regard to veratrum viride and sanguinaria vernalis, for which there seems to me to be the least shadow of ground, is whether they are narcotics and erethistics, or erethistics merely. I have been in the habit of employing both of them ever since the summer of 1810, and I have never witnessed any thing like a direct antirritant, anodyne, or soporific effect from either of them; though I have often witnessed erethism when they have been given in comparatively large doses, at short and regular intervals. For myself I have not the least doubt that they are non-narcotic erethistics; and yet as some professional friends who even recognize the power that I call erethistic, still insist that these articles are narcotic instead of erethistic, I am perfectly willing that my readers should have all the benefit of these doubts, thus having the question fairly brought before them. I have never seen any spasms or convulsions produced by veratrum viride or sanguinaria vernalis; nor have I ever known them destroy life; and with me there is as great a deficiency of definite and precise testimony upon these points as of actual knowledge.

Are veratrum viride and sanguinaria vernalis ever capable

of relieving the acinesiæ, parases and paralyses, rheumatalgia and neuralgia vera, or chronic forms and stages of rheumatismus and podagra? I have never known them employed in the acinesiæ, pareses or paralyses, nor in neuralgia vera, but in all the other diseases above-mentioned they have a well established efficacy. As there is unquestionably a strong analogy between the alcaloid now improperly called veratrine, and the active proximate principle of veratrum viride, as well as sanguinarine (the principal difference consisting in the fact that the last two are entirely destitute of all cathartic power, while the first is hydragogue cathartic) I can not see any good reason why veratrum viride and sanguinaria vernalis, but much more especially their active proximate principles in a separate state, might not be serviceable in the acinesiæ, pareses, and paralyses, and perhaps even in neuralgia vera, if employed as is directed for what is called veratrine, and for delphanine. But I have never known them tried in these diseases.

If we should admit that veratrum viride and sanguinaria vernalis are narcotics, it would not follow that lobelia inflata is so likewise. The erethistic power of this latter agent is materially different in quality from the erethistic power of the clematidiæ, anemoneæ, etc. If I were to rank veratrum viride and sanguinaria vernalis with the narcotics, I should not by any means associate lobelia inflata with them. Its utter destitution of any thing even like a true narcotic power will be shown when I come to treat of it individually. Though some varieties of erethistic power may be and are commonly mistaken for a narcotic power, yet some of them are so unlike, as never to be thus confounded with it, by any accurate observer at least. I feel absolutely certain that lobelia inflata is not narcotic; but if I mistake not, when administered in a comparatively large quantity in uniform doses, at regular and very short intervals, it is decidedly erethistic.

I never happened to witness either convulsions or death produced by either of these three articles; but if we may rely on very vague testimony, they extinguish life by occasioning extreme constitutional irritation and rapidly progressive exhaustion of the energies and powers of the nerves of chimical action, nutrition, and reproduction. Such being the fact, I should think that if they ever produce convulsions, they must be of the clonic sort."

EDITORIAL.

Personal Matters.

The editor of the *Buffalo Medical Journal*, in his April number, closes an allusion to the *Peninsula Journal* and our recent controversy with one of its editors, with the following paragraph:—

"In that hope, we shall say nothing more at this time—except to express our wonder at the very pleasant manner in which the *Peninsular* is soothing its quandom antagonist, the *North-Western*. All through the stormy fall and winter months, the *Peninsular* has showered down epithets on the *North-Western*, implying every sin in the decalogue (though dwelling particularly on the *eighth* commandment;) but now the *pleasant May is coming*, and the *Peninsular* is billing and cooing towards the *North-Western* like any turtle dove! What does it mean?"

Sure enough, what does it mean? Why, friend Hunt, it means simply, that it is more in accordance with the tactics and sense of propriety of the *Peninsular* to commence playing the part of the dove, all at once, than to give its readers a manly and honorable reply to the demands made upon it in the December number of this journal.

It may not be amiss to inform our readers that the only reply which the editor of the *Peninsular Journal* has made to those demands, is contained in the following paragraph from the March number of that journal:—

"As that contest, which was originally confined to the representatives of the rival schools, Professors Palmer and Davis, was sometime since terminated by the assumption of *a sort of armed neutrality on the part of the Journals*, through which they had spoken, we think the recent allusion of the *Buffalo Journal* to the subject, is a mere manœuvre on the part of the editor, by which he may retreat from the field himself, under cover of the smoke from our batteries, which had already ceased firing."

Now, we are perfectly willing that those who control the *Peninsular Journal* should end the controversies of any one of its editors, by making it "assume a sort of armed neutrality." Such a course may be convenient sometimes, to relieve its editorial corps from difficulties; but we very respectfully object to their including *our Journal* under *their* supervision. In using the plural number, in the above quotation, they have *kindly*, no doubt, informed their readers, that this Journal has also "assumed a sort of armed neutrality." We take this opportunity, however, to give our Michigan neighbors due notice, that the *North-Western Medical and Surgical Journal* is under neither dictation nor ownership aside from its editors —that it has assumed no sort of "armed neutrality" on any subject; and, further, that its editors belong neither to the *neutral* nor *neuter genders*.

Paralysis.

We copy the following account of a case of this interesting and formidable disease, from a letter, recently written to us by A. W. Dewey, M.D., of Strawtown, Ind. It will be read with interest and profit.

We have recently treated several cases of paralysis, arising from different causes, or rather dependent on different pathological conditions, and will furnish the readers of the *Journal* with an account of them as soon as time will permit.

"During last summer, I had partly prepared a communication, describing a case of paraplegia, which was at that time on hand, and privately soliciting your advice thereon. It was one for which I felt much solicitude, the patient being the wife of an esteemed friend—a very amiable young lady of 24 years, the mother of one child, five months old at the period of her attack, July 2d, 1855. On the morning referred to, when attempting to rise, she experienced, as she expressed it, a 'sensation of numbness in her limbs,' (inf. extremities only.) Her husband having gone to the store, some twenty rods off, she managed to get her feet off the bed and to dress herself. Supposing that a little exercise would rid her of the numbness, she succeeded, by the aid of her hands, in getting from the bed,

when, to her dismay, she found her limbs of no more use to support her, and capable of but little more feeling than the skirts of her garments—in short, she found herself upon the floor, and obliged to remain there till her husband's return. I was then called in—found her resting as comfortable as if in the best of health; no irregularity of functions manifest, and all the secretions apparently normal. The lower extremities, however, were in a state of almost complete paralysis, and as clearly beyond the influence of the will as if severed from the body. Slight tingling or pricking sensations were felt on pressure. The temperature was natural as the body. No premonition had been noticed, except a feeling of weakness in the back the day previously.

"After trying the remedies usually resorted to in cases of this kind, *i. e.*, irritation along the spinal column, cold bathing, blistering, and cupping, and finding the conditions the same, I explored the contents of my journals and standard works (so called) within my reach, without discovering anything that promised much encouragement—unless it was to come from the unexplored and illimitable estuaries of electrical power. Thither I directed my inquiries: a galvanometer was procured, and the current applied and caused to pass in all possible directions, but chiefly along the spine, from the neck to the sacrum, and down the extremities, graduating the power to the full extent, borne without severe suffering. The *cause*, I believed to lie entirely within the spinal canal; but, of its precise nature, I could only guess—whether mechanical pressure, by collected fluid, or œdema of the membranes, or osseous enlargements, or absolute innervation by the loss of dynamic power, I had no means of certainly telling. The galvanism was applied twice daily, for a few days, and then but once. In conjunction, I gave the following: Strychnine, 1-16 gr.; sulph., 3 grs.; camph., 1 gr.; every four hours—and applied the cups once every other day. The strychnine was gradually increased, until $\frac{1}{8}$ gr. was given, when its effects began to be manifest. It was then discontinued a few days, and again used. By the third day of this course, there was promise of improvement—a partial return of sensibility, and power of slightly flexing the right foot.

The course was closely adhered to, and the improvement was gradually extended to a favorable conclusion. The right extremity was first to show signs of returning vitality. By the end of the third week, she could stand by the aid of a staff or chair; by the end of the fifth, could stand alone; and by the seventh, able to resume in part the duties of the household. As the case began to improve, and other duties (by the increase of the business at that season) claimed my time and attention, I deferred finishing the original letter, and finally abandoned the intention of forwarding it. A review of my diary has again brought the subject to mind, and elicited this report, which I hope may be the cause of eliciting some remarks from your clearly practical pen. Heretofore, in such cases, recovery has been regarded as doubtful, and their management difficult. Nothing is laid down, that I have yet seen, sufficiently clear in diagnosis or definite in treatment, as the basis of a practice with even a probable certainty of success. Can you not give us something upon the subject, reliable and philosophical, as much so as your pathology of fever, when the duties of your station permit?"

Delaware County Medical Society.

The following named regular physicians of Delaware county, Iowa, met this day for the purpose of forming a County Medical Association, to-wit: John Acres, Albert E. Smith, Albert Boomer, Josh. F. Stout, Joshua Doran, E. C. Taylor, and James Wright.

On motion of Dr. A. E. Smith, Dr. John Acres was elected President, *pro tem.*, and Dr. A. Boomer, Secretary.

On motion of Dr. J. F. Stout, the following Constitution and By-Laws were adopted for the government of the Association:

CONSTITUTION.

ART. I. This Society shall be called the *Delaware County Medical Society.*

ART. II. All persons residing within the State of Iowa, on producing satisfactory evidence of being graduates of any regularly constituted medical college, or licentiates of any properly organized regular medical society, or passing a satis-

factory examination before the Board of Censors of this Society, shall be entitled to membership on signing the Constitution and paying into the treasury one dollar.

ART. III. The object of this Society shall be, the mutual improvement of its members in the various branches of medical, surgical, and pharmaceutical knowledge.

ART. IV. The officers of this Society shall be, a President, two Vice-Presidents, Corresponding and Recording Secretaries, Treasurer, and three Censors, whose duties shall be defined in the By-Laws, and who shall be elected annually on the first Monday of June, and hold their offices until their successors are elected.

ART. V. This Society shall keep a common seal, and give to each of its members a sealed diploma of membership, signed by the President and Secretary.

ART. VI. Each member shall make an annual contribution to the fund of the Society, of not less than one dollar.

ART. VII. The Constitution may be amended at any annual meeting, by a vote of two-thirds of its members present, in favor of such amendment: *Provided*, that notice of such proposed alteration shall be given at the annual meeting preceding such alteration. The By-Laws may be amended by a majority vote at any annual meeting.

ART. VIII. The annual meeting of the Society, shall be on the first Monday of June of each year, at such place as the Society may direct; and such other meetings may be called as may be thought necessary.

ART. IX. At each annual meeting of the Society, at least two essays upon scientific subjects shall be read by such persons as may have been appointed by the President for that purpose, copies of which shall be at the disposal of the Society.

ART. X. It shall be the duty of each member to keep a record of all interesting cases that may come under his observation, and report the same at the first meeting of the Society.

ART. XI. Members may be expelled at any annual meeting, for immoral, ungentlemanly, or unprofessional conduct, provided two-thirds of the members present, vote in favor of such expulsion.

The following officers were elected for the ensuing year:—

A. E. SMITH, *President.*

ACRES & DORAN, *Vice-Presidents.*

A. BOOMER, *Secretary.*

E. C. TAYLOR, *Treasurer.*

A. E. Smith, J. Doran, and J. F. Stout, *Censors.*

Resolved, That the *Delhi Republican* and the *North-Western Medical and Surgical Journal* be furnished with copies of the proceedings of this meeting for publication.

A. E. SMITH, *President.*

A. BOOMER, *Secretary.*

Bronzed Skin and Disease of the Supra-renal Capsules.

In our number for September, 1855, we recorded a case of *change of color of the skin from white to that of the mulatto*, without any well-defined cause to which it could be attributed, or any discovered post mortem lesion with which it could be associated. We were not aware until quite recently that there was any supposed connection between this condition of the skin and a special morbid state of any organ; and have been interested in the record of cases in some late numbers of the *London Medical Times and Gazette*, *London Lancet*, and *Association Medical Journal*, intended to illustrate "the connection between bronzed skin and disease of the *supra-renal* capsules," to which attention has been directed by Dr. Addison, the Senior Physician of Guy's Hospital, in a monograph on the "Diseases of the Supra-renal Capsules," recently published. According to the views of Dr. A., which are the result of clinical experience and are supported by eleven carefully narrated cases, among other symptoms indicative of disease of these organs, is "peculiar browning or bronzing of the skin," which may depend upon any disease which affects their disorganization, as cancer, tubercle, abcess. He says, that patients, suffering from this symptom, "fall gradually, and without any obvious cause, into a peculiar form of debility, which results almost invariably in death within a limited period."

The number of cases yet observed, is, of course, too small to establish a decided connection between these symptoms and disease of these organs, but they are sufficient to awaken interest in the subject, and lead to investigation and settlement of the question whether a new form of disease is to be added to the nosological list. The editor of the *Medical Times and*

Gazette has commenced a series of cases bearing upon this point, and appeals to the profession for the contribution of facts on the subject.

According to Dr. Addison, there are no marked symptoms of this disease, except progressive loss of strength, and the peculiar change in the color of the skin; but it is a characteristic of the debility attending it, that it is rarely attended by much emaciation; and that, though there is much flabbiness of tissue, the subject of it "retains throughout a general bulkiness of frame which contrasts strongly with his extreme feebleness." Usually, no other important visceral complication supervenes.

So little importance has been heretofore attached to the supra-renal capsules, that the examination of them has been almost universally neglected, until recently. Since Dr. Addison commenced his researches, attention has been paid to this point; and during the past two years, in five hundred inspections, which have been made at Guy's Hospital, under the observation of Drs. Wilks and Habershon, "only two cases have been met with where disease of these organs was found without having been previously diagnosed;" and in one of these, in which the patient died of cancer, the report mentions that the "patient's face presented a dingy hue."

Anatomists differ as to the appearance and structure of these bodies in the healthy state, and we are entirely ignorant of their physiological functions; and until these points have been settled by a long series of careful observations, no conclusion can of course be drawn as to what changes should be considered as morbid. Dr. Wilks, in a communication on the subject, in the December number of the *Medical Times and Gazette*, has given a wood-cut showing a section of the organ in a state of health, a magnified horizontal section of the cortical structure, &c., &c. Mr. Hutchinson remarks, in speaking of the relation between disease of the supra-renal capsules and the cachexia with bronzed skin, "the very liberal supply of nerves received by the supra-renal organs, leads to the conjecture that they are functionally very closely associated with the sympathetic system." He says that "Bergmann and Kolliker agree in describing their medullary center as little more than a nervous plexus; and the latter has counted no fewer than thirty-three nerve-trunks entering a right supra-renal body." Hence, the strong suspicion that these organs may have some share in lesions of nutrition.

The same journal, in its numbers for December, 1855, and January, 1856, gives us six fatal cases of decided "bronzed skin," in three of which positive disease of the supra-renal

capsules was found after death. In a fourth case, reported by Dr. Peacock, in which this peculiar hue of the skin was found associated with great debility, there was not the slightest evidence of disease either in the kidneys or the supra-renal capsules; but in this case a calcareous concretion of the size of a pea was found in the substance of the medulla oblongta, with well-marked softening of that part. In the other two cases, no autopsy was made. In the case reported by us, before referred to, no examination was made of the supra-renal capsules; but the kidneys were reported as normal in structure, though of only about half the usual size. The lesions varied in the three cases which were examined. The ages of the six patients reported in the *Medical Times and Gazette*, were respectively, 12, 14, 24, 24, 27 or 28, and 28 years. The age of our patient was 23 years. Death was sudden, and without any marked change in the symptoms preceding it, in five of these cases; and in the other, the manner of death was not known, as the patient was lost sight of; death was quite sudden in our patient. All of the patients, whose cases are reported in that journal, had walked out or walked about the day previous to death, including the one in which no alteration of the supra-renal capsules was found after death. Three were males, and three females.

In the *Association Medical Journal*, for January 19, 1856, two cases are related by Dr. W. Budd, both females, one 42 and the other 40 years of age, with the same peculiar hue of skin, and the same constitutional symptoms, both of which proved fatal, but in neither of which was any post mortem examination made.

In the number of the same journal for January 26, 1856, Mr. C. M. Thompson gives the post mortem of a case of what he calls "bronzed skin," in a female about 30 years of age, in which "the skin on the whole body was dark bronze; *the palms of the hands were white;* the conjunctivæ were perfectly clear and white." The discoloration had followed upon a fever, and had gradually increased. She had suffered from "severe dyspepsia, loss of appetite, frequent vomiting, emaciation, and also from violent spasm, resembling gall-stone;" but there was no proof of bilious obstruction. "The viscera were all found in a healthy state after death; but the gall-bladder was greatly distended, and *its duct entirely obliterated*, while the hepatic duct was pervious." This writer speaks of having, in the course of his practice, met with four cases of "black jaundice," in all of which he says "the *bronze discoloration* was very great," but there was a great difference between them and the

present case; the orange eye and the obstructed bile clearly indicating the nature of the disease in them."

At the meeting of the Pathological Society of London, January 1, 1856, according to the *London Lancet*, January 12th, Mr. Hutchinson exhibited two diseased supra-renal capsules taken from a patient who had died of extreme debility, in which the patient is said to have presented, in a marked degree, the peculiar brown skin regarded by Dr. Addison as diagnostic of disease of these organs; but no particulars of the special lesion, or of the history of the case are given, and we are inclined to believe that they are two of the cases more fully reported in the *London Times and Gazette* already referred to.—*N. Y. Medical Times.*

Graduates of the Medical Colleges, 1856.

Jefferson Medical College,	215
University of Pennsylvania,	140
University of New York,	98
University of Nashville,	85
Medical College of South Carolina,	85
Medical College of Georgia,	73
University of Louisiana,	65
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